

ABSTRACT OF THE DISCLOSURE

An optical mouse images as an array of pixels the spatial features of generally any micro textured or micro detailed work surface below the mouse. The photo detector responses are digitized and stored as a frame into memory. Motion produces successive frames of translated patterns of pixel information, which are compared by autocorrelation to ascertain the direction and amount of movement. A hold feature suspends the production of movement signals to the computer, allowing the mouse to be physically relocated on the work surface without disturbing the position on the screen of the pointer. This may be needed if the operator runs out of room to physically move the mouse further, but the screen pointer still needs to go further. The hold feature may be implemented with an actual button, a separate proximity detector or by detecting the presence of a characteristic condition in the digitized data, such as loss of correlation or velocity in excess of a selected limit. A convenient place for an actual hold button is along the sides of the mouse near the bottom, where the thumb and the opposing ring finger grip the mouse. The gripping force used to lift the mouse engages the hold function. Hold may incorporate a brief delay upon either the release of the hold button, detection of proper proximity or the return of reasonable digitized values. During that delay any illumination control or AGC servo loops stabilize. A new reference frame is taken prior to the resumption of motion detection.